

# uniden®



## MC 480 MARINE RADIOTELEPHONE OWNERS MANUAL

## UNIDEN MC480

The UNIDEN MC480 VHF marine radio transceiver has been designed to give you a rugged reliable instrument that will provide you with years of trouble-free service. You are encouraged to thoroughly read this manual to acquaint yourself with the characteristic and operation of your transceiver so that you can contribute to the longevity of your investment.

With proper care and maintenance, your UNIDEN MC480 will outlast your present vessel and serve you well on board several more. The full features and flexibility designed into this quality transceiver will prevent it from becoming obsolete regardless of changes in craft or geographic locations. The unit may be mounted in any number of convenient locations by utilizing the universal mounting bracket. The technical excellence of the UNIDEN MC480 is demonstrated by the multiplicity of uses for which it has been found acceptable by the Department of Communications.

The UNIDEN MC480 is of all solid state design with conservatively rated rugged components and materials compatible with the marine environment. The transceiver utilize as a number of gaskets, sealing rings, waterproof membranes, and other sealants to effect a splashproof housing for protection of the electronics.

# SPECIFICATIONS

## GENERAL

Channels	: Transmit 55 Receive 55
Frequency Control	
Method	: PLL synthesizer
Antenna Impedance	: 50 ohms, nominal
Speaker	: 2.85 Inch, 8 ohms
Microphone	: Rugged 600 ohms dynamic element with coiled cord and plug-in connector
Channel Display	: LED numerical readout
DOC Approval	: Type approved under Australia Department of Communications
Frequency Stability	: $\pm 0.0005\%$
Operating Temperature Range	: $-20^{\circ}\text{C}$ to $+50^{\circ}\text{C}$
Shock and Vibration	: Meets or exceeds EIA standards, RS152A and RS204A
Size	: 7-1/4"W(185m/m) x 9-7/8"L(250m/m) x 2-1/4"H(58m/m)
Weight	: 4.5 LBS
Controls	: On-Off/Volume, squelch & dimmer controls
Selector Switches	: 1W/25W power selector, Instant channel 16 and main channel selector switches
Connectors	: Antenna, microphone, remote speaker, DC power
Frequency Range	: 156 to 158 MHz transmit 156 to 163 MHz receive
Lights and Indicators	: Red/Green Transmit-Receive LED, Green 7 segment LED Channel Readout, Low Power & Channel 16 LED
Standard Accessories:	Plug-in microphone, mounting bracket and hardware, DC power cord, mike hanger, spare fuse, owner's manual,
Supply Voltage	: 13.8V DC negative ground

## TRANSMITTER

Power Output	: 25 or 1 watt (switch selectable)
Power Requirement	: 25 watts output: 4.5A @ 13.8V DC. 1 watt output : 1.0A @ 13.8V DC.
Modulation	: FM, $\pm 5$ kHz deviation (FCC designator 16F3)

Hum and Noise	
Attenuation	: 45 dB
Audio Distortion	: Less than 5% with 3 kHz deviation with 1000 Hz modulating frequency
Spurious	
Suppression	: -70 dB
Output Transistor	
Protection	: Built-in
Output Power	
Stabilization	: Built-in automatic level control (ALC)

## RECEIVER

Sensitivity	: -117 dBm for 12 dB SINAD -114 dBm for 20 dB quieting
Threshold Squelch	
Sensitivity	: 0.20 $\mu$ V (EIA method)
Tight Squelch	
Sensitivity	: 2 $\mu$ V (EIA method)
Spurious Response	
Attenuation	: 75 dB
Image Response	
Attenuation	: 75 dB
Intermodulation	
Attenuation	: 70 dB @ 0.3 $\mu$ V desired 50 dB @ 30 $\mu$ V desired 35 dB @ 300 $\mu$ V desired
Adjacent Channel	
Rejection	: 70 dB (EIA method)
Selectivity	: $\pm$ 7.5 kHz @ 6 dB down $\pm$ 15 kHz @ 60 dB down
Audio Output	
Power	: 3.5 watts minimum at 10% distortion at 1 kHz modulation and $\pm$ 3.5 kHz deviation (4 ohm speaker)
Power Requirement	: 0.6A @ 13.8V DC, squelched 1.2A @ 13.8V DC at rated audio output
IF Frequencies	: 1st--21.4 MHz 2nd--455 kHz
Hum and Noise	
Level	: -50 dB (EIA method)

# INSTALLATION

**CAUTION:** The MC480 will operate only with nominal 12 volt negative ground battery systems.

It is important to carefully determine the most suitable location for your MC480 on your vessel. Electrical, mechanical, and environmental considerations must all be taken into account. You must select the optimum relationship among these considerations.

Keep in mind the flexibility designed into the MC480 so that you can most conveniently use your radio. Features which should be considered are:

1. Universal mounting bracket may be installed on either top or bottom for shelf, bulkhead, or overhead mounting.
2. The microphone connector face forward allowing convenient in-dash or "built-in" installations.
3. The front panel can be fully reversed to provide for optimum viewing and operating for any mounting position. (See page 5)
4. The REMOTE speaker jack may be used with an auxiliary speaker.

All connections are "plug-in" type for easy removal of the radio.

## REVERSING THE FRONT PANEL

- 
- (2) TURN UNIT OVER AND CAREFULLY REMOVE COVER CABINET. PULL UP FROM REAR FIRST.
- COVER CABINET
- (3) DISCONNECT SPEAKER WIRES.
- (5) REMOVE TWO SCREWS HOLDING FRONT PANEL TO CHASSIS.
- CHASSIS
- PCB
- FRONT PANEL
- (6) TILT FRONT PANEL.
- (7) REPLACE FOUR SCREWS TO SECURE FRONT PANEL TO CHASSIS.
- (4) REMOVE SPEAKER CABINET.
- (1) REMOVE FOUR SCREWS FROM SPEAKER CABINET.
- SPEAKER CABINET
- (8) CAREFULLY REPLACE COVER CABINET BUT ON BOTTOM OF RADIO INSERT UNDER FRONT PANEL FIRST AND THEN LOWER AT REAR OF RADIO.
- (9) TURN RADIO OVER AND RECONNECT SPEAKER WIRE LEADS.
- (10) REPOSITION SPEAKER CABINET ON TOP OF RADIO AND REPLACE FOUR SCREWS TO SECURE THE HOUSING.
- (11) RETIGHTEN FOUR APPEARANCE COVER SCREWS.

Some of the more important external factors to consider in selecting the location of your MC480 are:

1. Select a location that is free from spray and splash.
2. Keep the battery leads as short as possible. Connection directly to the battery is most desirable. If direct connection cannot be made with the supplied power lead, any extension should be made with #10 AWG wire. Long extensions should use larger wire.
3. Keep the antenna lead as short as possible. Long antenna leads can cause substantial loss of performance for both receiving and transmitting.
4. Locate your antenna as high as possible and clear from metal objects. The reliable range of coverage is a direct function of antenna height.
5. Select a location that does not allow the radio to be subjected to direct sunlight (including that coming through windows).
6. Select a location that allows free air flow around the heat sink on the rear of the radio.
7. Select a location well away from the ship's compass. Auxiliary speakers also should be located away from the compass.

After you have carefully considered the various factors affecting your choice of location, position the radio (with the bracket, microphone, power plug, antenna plug, and any auxiliary plugs installed) into the selected location to assure there is no interference with surrounding items. Make the location of the mounting bracket. Remove the bracket from the radio and use it as a template to mark the holes to be drilled for the mounting hardware. Drill the holes and mount the bracket with hardware compatible with the material of the mounting surface. Install the power cable (red is +, black is -), antenna and all other auxiliary cables and accessories. Install the radio into the mounting bracket and connect all cables and accessories to the appropriate jacks and connectors.

## ANTENNA

A variety of antennas are available from a number of quality suppliers. It is recommended you draw upon the advice of your UNIDEN Dealer in determining a suitable antenna for your vessel and range requirements.

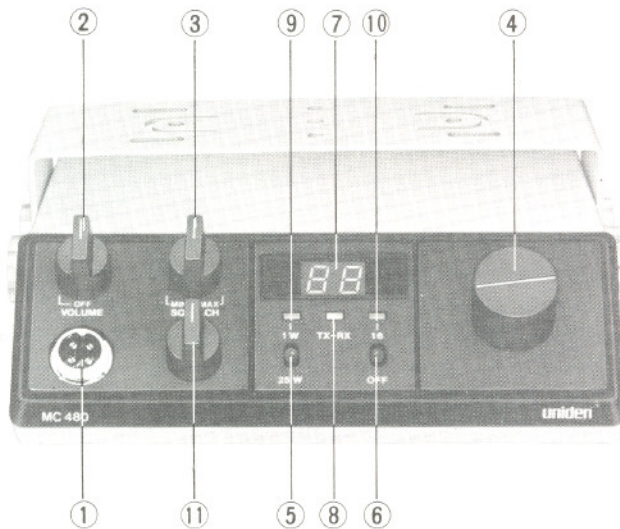
The general rules for antennas are: The more gain the greater the range and, the higher above the water line the greater the range. Antennas should be located so as not to be in proximity to metal objects. Antennas should not have excessively long coaxial feed cables.

## ENGINE NOISE SUPPRESSION

Interference from the impulse noise generated by the electrical systems of engines is sometimes a problem with radios. The MC480 has been designed to be essentially impervious to ignition impulse noise and alternator noise. However, in some installations it may be necessary to take measures to further reduce the effect of noise interference. All DC battery wires, antenna lead, and accessory cables should be routed away from the engine and engine compartment and from power cabling carrying particularly high currents.

In severe cases of impulse noise interference, it may be necessary to install a noise suppression kit that is available from your UNIDEN Dealer.

## FRONT PANEL CONTROLS AND INDICATORS

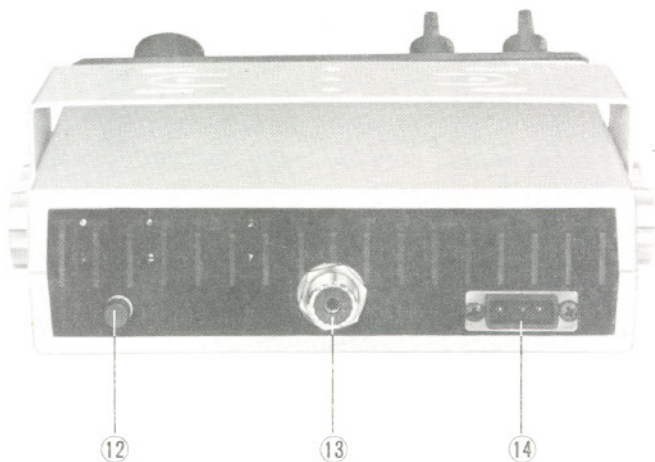


1. MICROPHONE CONNECTOR . . . Plug your Microphone in here.
2. ON/OFF VOLUME KNOB . . . is used to turn on the radio and set the volume to a comfortable level.
3. SQUELCH KNOB . . . is used to quiet background noise when no signal is being received. Turn the knob just past the point at which background noise is objectionable.
4. CHANNEL SELECTOR . . . is used to select the desired channel. The channel is displayed by the LED readout.



5. 1W/25W SELECTOR . . . controls transmitter output power. The 1W(watt) position should always be used for in-port or short range communications.
6. CH16 SELECTOR . . . provides instant CH16 by overriding Rotary Channel selector. LED indicator will light indicating unit is on Channel 16.
7. LED NUMERICAL CHANNEL INDICATOR . . . indicates channel in use.
8. TRANSMIT/RECEIVE LED INDICATOR . . . indicates whether transmit or receive mode is in use. (Red for transmit, Green for receive.)
9. LOW POWER LED INDICATOR . . . shows when unit is switched to Low power (1 watt).
10. CHANNEL 16 LED INDICATOR . . . lights to show CH16 switch has been activated.
11. DIM CONTROL . . . used to adjust the brightness of the LED's & LED display.

## REAR PANEL CONNECTORS



12. REMOTE SPEAKER CONNECTOR . . . If it is desired to use another speaker in addition to the one in the radio, a four or eight ohm speaker equipped with a miniature phone plug may be connected to this jack.
13. DC POWER CONNECTOR . . . Battery connections are to be made with the cable supplied to mate with this connector. Remember, red is +, black is -. The power cord is equipped with a fuse to protect the radio. Use only a Six (6) AMPERE fast blow fuse for replacement.
14. ANT CONNECTOR . . . This connector is for connection of the antenna. A type PL259 connector is required to make proper connection.

**VHF FM MARINE RADIOTELEPHONE  
CHANNELS AND FUNCTIONS  
(INTERNATIONAL CHANNEL)**

CHANNEL DESIG	FREQUENCY(MHz)		TYPE TRAFFIC	SHIP TO SHIP	SHIP TO SHORE	PERMANENT SCAN LIST
	SHIP	SHORE				
P1	157.375	157.375	Non Com'l	Yes	Yes	
02	156.100	160.700	Port Ops	Yes	Yes	
03	156.150	160.750	Port Ops	Yes	Yes	
04	156.200	160.800	Port Ops	Yes	Yes	
05	156.250	160.850	VTS	Yes	Yes	
06	156.300	156.300	Safety	Yes	No	
07	156.350	160.950	Com'l	Yes	Yes	
08	156.400	156.400	Com'l	Yes	No	
09	156.450	156.450	Com'l & Non Com'l	Yes	Yes	Fish
10	156.500	156.500	Com'l	Yes	Yes	
11	156.550	156.550	Com'l	Yes	Yes	
12	156.600	156.600	Port Ops	Yes	Yes	
13	156.650	156.650	Navigational	Yes	Yes	
14	156.700	156.700	Port Ops	Yes	Yes	
15	156.750	156.750	Environmental	Yes	Yes	Environmental
16	156.800	156.800	Safety Calling	Yes	Yes	
17	156.850	156.850	State Control	Yes	Yes	
18	156.900	161.500	Com'l	Yes	Yes	
19	156.950	161.550	Com'l	Yes	Yes	
20	157.000	161.600	Port Ops	Yes	Yes	
21	157.050	161.650	Coast Guard	Yes	Yes	
22	157.100	161.700	Coast Guard	Yes	Yes	
23	157.150	161.750	Coast Guard	Yes	Yes	
24	157.200	161.800	Public Corresp.	No.	Yes	Busy Tel.
25	157.250	161.850	Public Corresp.	No	Yes	Busy Tel.
26	157.300	161.900	Public Corresp.	No	Yes	Busy Tel.
27	157.350	161.950	Public Corresp.	No	Yes	Busy Tel.
28	157.400	162.000	Public Corresp.	No	Yes	Busy Tel.
60	156.025	160.625				
61	156.075	160.675				
62	156.125	160.725				
63	156.175	160.775				
64	156.225	160.825				
65	156.275	160.875	Port Ops	Yes	Yes	
66	156.325	160.925	Port Ops	Yes	Yes	
67	156.375	156.375	Com'l	Yes	No	
68	156.425	156.425	Non Com'l	Yes	Yes	Fish
69	156.475	156.475	Non Com'l	Yes	Yes	Fish
70	156.525	156.525	Non Com'l	Yes	No	Fish
71	156.575	156.575	Non Com'l	Yes	Yes	Fish
72	156.625	156.625	Non Com'l	Yes	No	Fish
73	156.675	156.675	Port Ops	Yes	Yes	
74	156.725	156.725	Port Ops	Yes	Yes	
77	156.875	156.875	Port Ops	Yes	No	
78	156.925	161.525	Non Com'l	Yes	Yes	
79	156.975	161.575	Com'l	Yes	Yes	
80	157.025	161.625	Com'l	Yes	Yes	
81	157.075	161.675	Coast Guard	Yes	Yes	Coast Guard
82	157.125	161.725	US Gov Only	Yes	Yes	
83	157.175	161.775	Coast Guard	Yes	Yes	Coast Guard
84	157.225	161.825	Public Corresp.	No	Yes	Busy Tel.
85	157.275	161.875	Public Corresp.	No	Yes	Busy Tel.
86	157.325	161.925	Public Corresp.	No	Yes	Busy Tel.
87	157.375	161.975	Public Corresp.	No	Yes	Busy Tel.
88	157.425	162.025	Com'l	Yes	No	Busy Tel.

**CAUTION: OPERATION ON CHANNELS NOT DESIGNATED FOR USE BY YOUR CLASSIFICATION OR CRAFT OR ON INTERNATIONAL CHANNELS WHEN WITHIN AUSTRALIAN TERRITORIAL WATERS IS A VIOLATION OF DEPARTMENT OF COMMUNICATION RULES AND REGULATIONS AND MAY RESULT IN SEVERE PENALTIES.**

## CARE AND MAINTENANCE

Your MC480 is a precision piece of electronic equipment and you should treat it accordingly. Due to the rugged design, very little maintenance is required, however, a few precautions should be observed.

If your radio has been accidentally subjected to spray or splash you should immediately wipe it down with a soft cloth dampened with fresh water.

If the antenna has been damaged, you should not transmit except in case of emergency. A defective antenna may cause damage to your radio.

You are responsible for the continued DOC technical compliance of your radio. You are urged to arrange for periodic performance checks with your UNIDEN Marine Dealer.

## SERVICE

Should you find it desirable or necessary to have service performed on your MC480 you are urged to contact the UNIDEN Dealer from whom you made your purchase. He, or any other UNIDEN Dealer, is able to provide you with complete service performed by well qualified personnel.

If you require service that is within the terms of your warranty you should present the validated WARRANTY CARD to your dealer to authenticate your claim. Your WARRANTY CARD is your passport to easy service! This card is to be completed by your dealer at the time of purchase: Other suitable documents which clearly establish ownership and date of purchase may be used in lieu of the WARRANTY CARD.

If you find it inconvenient to have service performed by your local UNIDEN Marine Dealer, you may also obtain service from the Factory Service Station. If you require factory service, please pack your radio in a suitable container which will provide adequate protection, enclose a note describing the problem, and a copy of your validated WARRANTY CARD or other proof-of-purchase document and return (transportation prepaid) to:

Santronic Agencies Pty. Ltd.  
13 Garema Circuit, Kingsgrove  
Phone 758 1522  
P.O. Box 12, Kingsgrove, NSW 2208

If the service you require is not within the terms of the warranty, you should specifically include written authorization of proceed with service and to agree to appropriate charges.



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## 12 MONTHS FULL WARRANTY

**WARRANTOR.** SANTRONIC AGENCIES PTY. LTD. 13 Garema Circuit, Kingsgrove NSW 2208 ("SANTRONIC").

**ELEMENTS OF WARRANTY.** SANTRONIC warrants, for the duration of this warranty, its UNIDEN Marine Product to be free from defects in materials and craftsmanship with only the limitation or exclusions set out below.

**WARRANTY DURATION.** This Warranty shall terminate and be of no further effect One (1) years after the date of original purchase of the Product or at the time the Product is (a) damaged or not maintained as reasonable and necessary, (b) modified, (c) improperly installed, (d) is repaired by someone other Warrantor for a defect or malfunction covered by this Warranty, or (e) used in a manner or purpose for which the Product was not intended.

**PARTS COVERED.** This Warranty covers all components of the Products.

**STATEMENT OF REMEDY.** In the event that the Product does not conform to this Warranty at any time while this Warranty is effective, Warrantor will repair the defect and return it to you prepaid, without charge for parts, service, or any other costs incurred by Warrantor or its representatives in connection with the performance of this Warranty. In addition, if the Product contains a defect or malfunction which is not repaired after a reasonable number of attempts by Warrantor to repair the Product, the Product or defective component will at our discretion, will be replace without charge, when the defective product is delivered to the warrantor at 13 Garema Circuit Kingsgrove NSW 2208 free and clear of all liens and encumbrances. Please note that while the Product will be remedied under this Warranty without charge. **THIS WARRANTY DOES NOT COVER OR PROVIDE FOR THE REIMBURSEMENT OR PAYMENT OF INCIDENTAL OR CONSEQUENTIAL DAMAGES.**

Some states do not allow this exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you.

**PROCEDURE FOR OBTAINING PERFORMANCE OF WARRANTY.** In the event that the Product does not conform to this Warranty, the Product should be shipped prepaid to Warrantor at 13 Garema Circuits Kingsgrove NSW 2208. **THE ORIGINAL OR COPY OF THE SALES RECEIPT OR OTHER VALID EVIDENCE OF THE DATE OF THE ORIGINAL PURCHASE MUST ACCOMPANY THIS PRODUCT.**

**LEGAL REMEDIES.** This Warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

# Santronic

AGENCIES PTY. LTD.

13 GAREMA CIRCUIT, KINGSGROVE  
PHONE 758 1522, TELEX AA73170  
P.O. Box 12, Kingsgrove, NSW 2208

BRISBANE: 3/12 RANDALL ST  
SLACKS CREEK, QLD 4127  
PHONE 07 290 1188

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